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E S S A Y

ON THE

AUTUMNAL DYSENTERY.

By ANDREW WILSON, M. D.

Fellow of the Royal College of Physicians at EDINBURGH,
and Physician to the Medical Asylum, LONDON.

THE SECOND EDITION,

With an Introduction and Notes, containing occasional Remarks on DR. ZIMMERMAN, &c. on the same Subject.

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T O
DR. JOHN RUTHERFORD,
PROFESSOR OF THE THEORY
A N D
PRACTICE OF MEDICINE,
E D I N B U R G H.

S I R,

I H A D the Honour of Addressing this ESSAY to You, as my respected Master, my Patron, and my Friend; almost Twenty Years ago.

I cannot possibly express the additional Degree of Pleasure it yields me, to have an Opportunity of re-addressing You, and of mingling

D E D I C A T I O N.

ling my Veneration with my Esteem, and my Affection for You, at this Remote Period of Time.

Though far and long removed from personal Intercourse with You, I can never forget You; but shall remember You with Complacency, and the greatest Respect, *dum Spiritus, hos regit Artus.*

I am, with most intire Regard and Esteem.

S I R,

Your most Obedient,

And most Humble Servant,

London, Adelphi
Oct, 20, 1777.

ANDREW WILSON.

INTRODUCTORY DISCOURSE.

WITHIN less than two months after I went to reside at Newcastle, an epidemic Dysentery (a disease they had no memory of the place being ever visited with before) broke out there with great violence, and to the great terror both of the town and populous country about it, in the beginning of the month of August, after an uncommon heat and drought for several months preceding. In the two first patients I was called to, that very symptom luckily occurred, which then I really looked upon, and still do look upon, as a discovery towards ascertaining the precise nature of the disease, and the certain invariable indications of cure. My good success with my first patients, and with many others afterwards, and the observations I made, led me into that train of reasoning which at the time I committed to writing, and which are contained in the follow-

ing sheets, first published in summer 1760. I thought myself so enlightened, by considering that symptom as a key to the genuine nature of the disease, that I really never thought of consulting any author afterwards for further instruction in it. I had formerly read Sir John Pringle's universally esteemed observations on the Dysentery, and other army diseases, having been honoured with a present of it from his excellent brother Sir Robert Pringle, of Stitehill, when it was first published; and probably then I imbibed more of his views than I distinctly recollected when I wrote the Essay. But I had not an opportunity then, if I had thought of it, to examine how that matter stood, having left part of my family, and most of my books behind me, at a house and small farm of the Marquis of Lothian's, that I was in possession of for some time after I removed from it myself to Newcastle. In this edition of the Essay, I have taken notice wherein I have coincided with his observations.

I am not particularly acquainted in what manner other gentlemen, who have since treated of this subject have handled it; only as I was about republishing this Essay, I was curious to see how it was treated of by Dr.

Zimmerman,

Zimmerman, physician in ordinary to his Britanic Majesty, at Hannover. As I had no apprehension that he knew ought of my Essay, I was very desirous to know if that symptom of the disease, which had caught my attention so much, had occurred in his observations. I did not find much satisfaction on that point, and was the more surpris'd at it, that in running over his work, I discovered that he had made use of my Essay, and totally suppress'd his knowlege of it, while he was very profuse in his references to every other latter English writer on the subject. I would be sorry to mention this circumstance upon presumptive evidence only, but he has extracted a pretty long case verbatim from my Essay, which was to be found no where else, and introduces it in this very extraordinary manner, page 253 of the translation by Dr. Hopson—
 “ I remember to have read a remarkable case.
 “ that happened in England, and is written
 “ in the English language, which deserves to be repeated here”—A very strange way this of extracting from a writer upon the very subject he was treating of, while he was, almost in every page, citing other authors who had written in English as I had done—I make no remarks upon it.

There is one very diverting mistake the Dr. has fallen into, through his imperfect knowlege of the signification of the word *lusty* in our language, which, I fancy, he has taken for synonomous with *wanton*, at least I guess so. I say—a middle-aged, *lusty* and tolerably healthy widow.—The translator of this case from the German, renders it a *brisk* and tolerablr healthy widow of a middle age. *Brisk*, I apprehend, Dr. Hopson uses as a discreet translation of the German word Dr. Zimmerman had used for his idea of the signification of *lusty*.

I give Dr. Z. credit for introducing the use of such agreeable purges as tamarinds, cream of tartar, &c. in the Dyfentery, but liquid purges in general were in use long before he wrote. Dr. Will. Eliot, now a physician at Jedburgh, in Scotland, when he joined the British hospital, in Germany, in 1760 or 1761, carried over my Essay with him, and wrote me afterwards from thence, that the method of treating the Dyfentery with purging, was attended with good success there; but that Dr. Monroe preferred liquid purges, of salts and manna particularly, to those of rhubarb and calomel which I recommended, and he thought they answered

proved better. I own, I never attempted the use of them, because during the violence of that disease, I found so many who had such constant nauseas, that their stomach rejected their necessary drink and food, and in these cases, I have observed bolus's or soft pills of rhubarb or ipecacuan stayed with them, when liquids would not: nay I have known patients bring up phlegm, bile, and other liquids the stomach was charged with, when the medicines they swallowed before in any consistent form, did not come up with the braiding or reaching that they occasioned. But I think the public is most obliged to Dr. Z. for the information he gives them, on the authority of his friend and correspondent, of ripe fruits being an efficacious medicine in that disease, which had formerly been accounted a cause of it, but which I could never allow myself to suppose, as the reader will see in perusing the Essay.

Dr. Z. seems to have considered any use of warming medicines and anodynes, as if it necessarily implied the neglect of purgatives. While these are not neglected, there is no disease that demands more the use of warming cordials than the Dysentery does; as is evident from the faintness, clammy sweats, and

low pulse, &c. that are so frequent in it ; nor can they have any bad influence on the primary seat of the inflammation in that disease. As to the anodynes, they are indispensable ; nor is there any circumstance that can render the use (I don't mean the abuse) of them dangerous, excepting only that of laxatives not operating. In that case indeed it is dangerous to meddle with them, nor can any prudent, judicious practitioner attempt to administer them then, excepting with a design to procure some ease and strength to the patients in order to prepare them for the repetition of, or applying again to evacuating medicines. They are necessary in small glysters ; they are necessary to fix medicines in the stomach, and when evacuants have had their proper effect, they are necessary to procure rest, natural warmth, and perspiration, which is the second great indication of cure after that of keeping the belly constantly open by day. But these things I have explained sufficiently in the treatise itself.

When practitioners are agreed upon the method of cure, it may be deemed of less moment, whether they agree or not in their manner of explaining the symptoms of a disease ; and yet it is a matter of no small consequence

sequence to any practitioner who wishes to proceed rationally, and to form clear and distinct indications of cure in any disease.

I never could enter into that series of reasoning which imputed the Dysentery to some putrid fomes in the blood, which nature, somehow or other, threw upon the rectum, &c. in this disease ; and that purging was indicated to drain off this putrid fomes out of the blood. I fancy most rational people now do agree with me, in thinking, that all evacuants act upon the mass of our fluids, without any elective affinity with morbid ones more than others, excepting in so far as different medicines may have more sensible effects or irritation, upon one system of glandular orifices than another. I can see no reason to suppose that there is any putrid fomes in the blood, prior to the commencement of an autumnal Dysentery, nor that what may be supposed to be in it afterwards could be cured by purging. The putridity in the blood during the disease being generated by the nature of the concomitant fever, and the absorption of the obstructed matter thrown upon, and separated from the inflamed parts of the rectum, &c. which, from the nature and seat of the parts, is apt to putrify more readily than any whereelse.

An

All that can be rationally meant by purging here, then can be no more than to relieve the obstruction, and to keep up or restore that regular action of the intestines in carrying along and discharging the feces, which being diminished or suppressed in different degrees, seems to be one of the most immediate causes of the obstruction and inflammation in the immediate seat of the disease. The intestines being in a comparatively indolent state when the disease is formed, the disease increases that indolence. The liver becomes affected by the morbid blood carried to it from the seat of the disease, and by the sympathy with the bowels in general, which it has in all their affections, because most of their blood is carried to it. It generates a vitiated bile, which, because it is not transmitted so regularly downward as ordinarily, is thrown back into the stomach, and together with the disorder generated in it by the febrile heat, and the torpidity of the intestines it communicates with, induces a constant nausea, and inclination to throw it up.

The event plainly shows that this, and not any mysterious secretion of putrid humour from the blood, is the case. For when ever the passage
is

is opened, and the regular natural course of the excrements is restored and sustained, the original disease is at an end; the weakness of strength, appetite and digestion, the hiccough, and particularly the sometimes tedious diarrhea, being all consequences, and not, as Dr. Z. seems to account them, any continuation of the original disease. The characteristic symptoms of a true febrile Dysentery are, a constant nausea or bilious vomiting, a suppression of the natural feces, and a constant nifus to discharge corrupted or suppurated humours from the inflamed fore parts about the rectum, and colon, when it reaches so high.

It surprizes me much, that Dr. Z. should have met with gripings and constipation, which, if neglected was apt to degenerate into the most dreadful Dysentery; and yet that he should never find the latter of these symptoms in the Dysentery itself: especially when it is known, that the slighter complaints that appear when the Dysentery, or any other disease, if epidemic, bear always some relation to the nature of the epidemic itself.

Sir John Pringle is the only person I know of, who has expressly taken notice of the existence of these hardened knotty feces, under
the

the name of scybala ; indeed he refers the discharge of them to the convalescent stage of the disease : it implies, I think, indeed, that they existed in the bowels during the disease ; and I always found that the discharge of them, either in that form, or as re-dissolved, gave an immediate favourable turn to the disease ; when the propulsive or peristaltic motion of the intestines was kept regularly up by laxatives : for if that was neglected, the bowels were apt to turn sluggish again in their action, and all the symptoms of the disease to recur.—As to the other suety-like substances discharged, which Sir J. P. is also peculiar in noticing, I observed them indeed generally to make their appearance during that diarrhea which was subsequent to the Dysentery, but which Dr. Z. seems to consider as a continuation of it. Indeed he seems to include even benign diarrheas under his idea of a Dysentery ; as it would seem from his reference to these of *Java* and of *Paris*. He even seems to reduce a *cholera morbus* to that class likewise, if I am not misled in this suspicion by what he says, page 164, “ The stools are
 “ sometimes inconceivably copious, and this
 “ is so very dangerous a circumstance, that
 “ the

“ the patient will appear in a dying condition in the space of twelve hours, and often really dies in that time.”—If this is a cholera which the Dr. here describes, it is a dangerous mistake to confound it with a Dysentery; for if it is treated with cooling laxatives, and not with cordials and anodynes, the patient must inevitably die in a very short time.

There is indeed another species of copious stools sometimes to be met with in the very last stage of a Dysentery, which are always a fatal symptom. Though the natural discharges have been suppressed through the course of the disease, yet at last upon the approach of a mortification, or of a paralytic state of the intestines (which is known by a diminution of pain, cold sweats, and a cold dampness of the extremities) then the intestines, having totally lost their tone, the humours of the body, will pour in upon them, dissolve the excrements, and bring them off in copious fetid stools immediately before death: but this is not a symptom that is constant, nor is it peculiar to the Dysentery, for it happens frequently enough in the closing period of fevers, and also of other diseases.

In

In this edition of the Essay, I have thrown every thing, that on revifal occurred to me, into the Notes ; in order to preferve the original Text diftinguifhed from any thing I have thought neceffary to add to it or illuftrate it by.

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A N
E S S A Y
O N T H E
AUTUMNAL DYSENTERY.

THE Dysentery prevailed exceedingly in New-Castle upon Tyne, in autumn 1758. and recurred again the succeeding autumn, not there only, but in many other neighbouring places, with seemingly greater violence, Some success being ascribed to my practice upon the first appearance of the disorder, in the former of these seasons, it gave me an opportunity of attending many in it afterwards, which I endeavoured to improve; for acquiring as precise an idea as I could attain of the determinate character of that disease, and of the most rational and successful method of curing it. The conceptions that I then formed of the nature and genius of the

Autumnal Bloody Flux, and of the true indications of cure to be adhered to in it, I digested into the following Essay, which was first printed in the year 1760*.

The Bloody Flux is an epidemic † febrile, putrescent, painful inflammation, primarily affecting the inner coat, but gradually extending itself through the whole substance, or all the coats of the great guts, especially of the lowest or rectum.

This inflammation is seldom communicated, in any remarkable degree, to the small guts: but the stomach and liver, though they rarely or never partake of that inflammation which is the characteristic of this distemper in the rectum, the primary seat of it; they are nevertheless generally affected by it in a very particular manner.

This disease is called the Bloody Flux, because more or less blood is generally, though not always, mixed with the slimy, fetid stools which are discharged during the course of it. The bloody discharge may be attributed to different

* It bears date 1761; but it is not uncommon with publishers to annex a date to their publications, posterior to the real one.

† I have omitted *Infectious*, in my definition of the dysentery; because, when a disease is epidemic, I know of no criterion to ascertain whether it is at the same time infectious or not; and where this is the case, such an idea ought rather to be discouraged, as tending to fright the timorous from their duty to the sick, or discourage them under the discharge of it.

ent causes, according to the degree, malignancy and continuance of the disease; such as the vehemence of the inflammation, stretching the vessels opening into the cavity of the intestines, and straining red blood thro' them, which does not naturally pass that length undissolved; the acrimony of the humours which are discharged into these guts, during the inflammation, fretting and corroding the blood vessels; or, when there is an actual suppuration, which is not uncommon, more of the blood vessels are also thereby dissolved.

During the increase and height of this distemper, it is very improperly called a Flux §. A proper Flux, or Diarrhea, is a constant flow of immoderately liquid, but otherwise natural stools, dissolved by too great an irritation

B 2

upon

§ This is that point which I stand singular in fixing upon as that criterion of the disease, which indicates the constant necessity of purging through the whole course of it, till the stools become natural again. It is a groundless and preposterous notion, to suppose there is a previous morbid pulrescency in the blood; which nature, by some secret elective attraction, disposes to be discharged by the lower guts, rather than any other part; and that, on that account, we ought to assist nature in discharging it by purging.

The putrid matter is not the cause, but the result of the inflammation.— I say I stand singular in this point, because none of the various writers who have treated of this disease, since the first publication of this Essay, have condescended on the indolence of the bowels, to their natural and ordinary action, as a symptom of any importance in the disease.

Sir John Pringle, however, who wrote long before, particularly observes, that, though the dysenteric stools are frequent, they are not large, and that they chiefly consist of mucus mixed with blood; and, though he does not in as many words mention a retention of the natural feces as a symptom of the disease, yet few or none of these circumstances have escaped his observation that necessarily lead to the inference.

upon, or too great a relaxation of, the vessels destined for mollifying the feces and lubricating the passages by their humours ; by which means they are disposed to dismiss a superfluous quantity of them. But in the Dysentery, the passage of the natural discharges is resisted, and their consistence is often increased to such a degree, that when they are urged along by the assistance of purgatives, they are excluded in unnaturally hard and dry little lumps or balls. This leading symptom of the disease, which I do not remember to have been attended to, I shall endeavour to explain afterwards.

That this Dysentery is an epidemic distemper, is evident from its recurring periodically at a certain season, namely, during the harvest quarter. In the end of August, and in the month of September, while in fine clear weather (which is the most infectious) the days are almost as hot as at Midsummer, the evenings and mornings grow then remarkably colder than they are a month later in the season. The nights are then likewise frequently foggy, and the weather, when it is not clear, is often very turbulent and stormy.

The season of the year, the state of the blood, and the seat of the disease, all conspire to

to give it a tendency to putrescency. The blood is so much rarified by the preceding heat of summer, in contagious autumns*, as to acquire a greater degree of solution than, than the fluids are subject to at other times. It is on this account that autumnal diseases, in general, do not bear bleeding so well as the diseases of the other seasons do: however violent the symptoms of any febrile disease then is, the blood is never so fizy as it would be under the same circumstances at another season; neither is the crassamentum, or red part of the blood, so firm†. Again, no inflammation in membranous parts produces so benign a matter, when it comes to suppuration, as it does in other parts of the body. The particular seat likewise of this disease subjects the matter separated by it, whether suppurated or not, to greater heat and alteration by ferment, so that it sooner acquires a putrid taint there than almost any where else.

There are many inflammations, both external and internal, which come on by gradual obstruction, without any leading febrile symp-

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tom;

* Contagious, I apprehend, not because they convey any secret poisonous infection into the blood; but because they relax the solids, and render the progressive motion of the fluids weaker; thereby disposing them, upon any accidental fever or inflammation, to contract a putrescent disposition and tendency.

† This is particularly remarked by Sir John Pringle.

tom; tho' a symptomatic heat and fever attends every inflammation of any consequence: but in this disease, as in the Pleurisy, Peripneumony, acute Rheumatism, &c. the first attack of local pain and inflammation is ushered in by the common symptoms of a fever. Lassitude, coldness, shivering or trembling, succeeded by febrile heat, drought, &c. precede or accompany the first access of pain and gripings in the lower belly; and frequently also in the back opposite to the windings of the colon, are soon followed by slimy, bloody, fetid, unnatural dejections by stool. This observation renders it not altogether groundless to have some respect to a crisis in the course of this disease: indeed, though some other symptoms, such as Diarrhea, Hiccup, &c. which are rather superinduced as consequences of the original disease, may run out to a considerable length of time; yet I have rarely observed, in persons who recover, that the proper dysenteric complaints and stools continue with obstinacy, and unmixed with natural feces beyond the fourteenth or fifteenth day, unless the ulceration has been very great, the villous coat much abraded, or the disease unskilfully treated.

An inflammation or load of humours falling
upon

upon any surface naturally destined for a constant regular secretion, occasions a seemingly increased, but vitiated and inspissated derivation from that part. A seemingly increased secretion, I say, for it is doubtful whether the discharge is really increased or not: the natural secretion, being more mild and liquid, is also more apt to be reabsorbed again, or exhaled; and consequently it makes a less sensible figure, though probably it is really greater, than those diseased secretions do. For example, we see how viscid and how superfluous a quantity of mucus is discharged from the membranes of the nose during a common cold; tho' in fact a greater quantity of humidity is separated in health, which makes a much more inconsiderable figure, being mostly evaporated in effluvia. The case is quite parallel in the beginning of this disease while yet there is no actual suppuration, and in many there never is any; the villous coat of the lowest great guts being obstructed and inflamed, it constantly separates a vitiated, glarey humour, instead of that mild moisture which naturally bedews that cavity. The obstruction to the regular passage of the feces occasions these slimy dejections to appear still more in quantity; for all the moisture destin-

ed to mollify them is collected, inspissated, and forced away by itself: indeed it becomes soon so tenacious by the inflamed heat of the parts, that when natural stools are urged along, that morbid stuff is too glarey to incorporate with them, and therefore comes off in considerable quantities by itself. This constant slimy discharge from an inflamed part allotted for such a constant secretion, is the plain reason why inflammations never swell those organs to such a degree and magnitude, as they frequently do external parts and viscera, which discharge their secretions by canals: the diseased guts are nevertheless always thicker in their substance than in the natural state, as has been found upon dissection*. It is plain, however, from the symptoms, that the villous coat is the primary seat of the disease, which yields a favourable prognostic: I have frequently found confirmed by experience, that when the disease is early taken notice of and properly treated, it is easily removed, at least its future violence and danger are checked.

No

* See Dr. Pringle's Diseases of the Army, upon whose testimony, Bonetus's, &c. this is founded, for I never had an opportunity of any observation of that kind; a violent aversion to all dissections, and an indifference about them on the other hand, being among the local prejudices of New Castle.

No inflammation is without some pain, though several of the internal viscera are endowed with but a small degree of sensibility: but the pain which arises from the inflammation which constitutes this disease, is of a very excruciating and complicated nature; which yet does not arise so much from the acuteness of the local pain, as from an almost constant forcible painful nifus impressed upon the parts in immediate connection with the seat of the inflammation. The windings of the colon are affected with such violent griping and constant wringings, as are ordinarily felt during the operation of drastic purges, not properly corrected: the seat of the inflammation itself is afflicted with a constant painful pressure upon it, partly from the violent action of its own muscular fibres, and partly from the sympathetic contraction of all the muscles which act in connection with it: this pressure is sometimes so intolerable, that I have frequently heard female patients compare it to those violent nifus's excited in child-bearing. There is another no less afflicting and uninterrupted source of pain than either of these; the inflammation reaching almost from its first invasion to the very extremity of the Anus, the Sphincter is thereby kept in a constant
pasmodic

spasmodic contraction, and is so tightened upon the inflamed parts which it is bound round, that it occasions very great anguish, which is still heightened by the dryness of the parts within the action of the Sphincter: for the constant moisture upon the surface of internal inflammations is a great alleviation of the pain they would otherwise cause. This last species of dysenteric pain is well known to those who are afflicted with the Hemorrhoides, particularly the Cæci. It is this painful affection which induces that tenesmus so inseparable from the Dysentery.

The singular aptitude and particular destination of the small guts, beyond any other part of the alimentary canal for absorption, renders them less liable to fall into the inflammatory state of the lower guts in this disease. As the small guts are principally appointed for taking up the chylify'd aliments, they are therefore far more abundantly stored with chylous and other absorbent vessels than with excretories. The facility and expeditiousness with which absorption is performed in them, renders their ultimate arterial vessels far less liable to obstruction. For the same reason, when any inflammatory obstruction does hap-
pen

pen there, as in the Cholera *, Iliac Passion, &c. their vehemence and career is much greater, and the danger more imminent and instantaneous ; whereas it is much more slow and less acute, though often not less dangerous in the great or lower guts. There is indeed an obstruction of another kind, which the small guts are liable to ; namely, that of the Meseraic Glands, by which the Chyle is vitiated, robbed of its glandular concoction and acquisitions, and at last its passage is gradually stopped ; but that obstruction belongs to, and is the cause of another system of diseases which have no connection with the present subject. Another reason why these bowels are not so subject to the obstruction and inflammation which characterise this disease, is the fine liquified rare state, in which the aliments pass along this division of the chylopoetic Viscera : it is never much loaded with any collective quantity of those parts of the Injesta which are indigestible

* The cholera morbus is here improperly referred to local obstruction. It is rather owing to excessive relaxation of the excretories into the intestines ; and of course a sudden rush of humours into them, while the solids either unable of themselves to recover their tone, or by the irritation of the humours are thrown into these violent spasmodic contractions that produce these exquisite wringing pains felt in that disease.—That these pains are of the spasmodic kind, is evident from the low sunk pulse and the cold clammy sweats that attend them.

digestible, and to be thrown off by stool †. The rarity of the aliments there is so great, until they approach the lower end of the Ilium, that one considerable portion of that tube has obtained the name of the Jejunum, because of the very inconsiderable figure our food always makes in that stage of its progress along the canal.

This immunity of the small guts, from any sensible degree of that febrile inflammation which constitutes the distemper we treat of, renders it not so obvious how the stomach and bile should be so immediately and so sensibly affected by it, which lie still more remote from, and are seemingly less connected with the seat of the disease, at the upper end of that long canal; by which medium one would think they must be drawn into sympathy.

This together with the inflamed apthous, and even ulcerated state of the fauces, frequently to be met with in advanced stages of the most violent Dysenteries, has made some conclude that the inflammation has been propagated from end to end of the canal; but the acute nature of any inflammation, either in the small guts or in the stomach convince

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† This is a phenomenon that has never hitherto been sufficiently accounted for by physiologists. The matter is certainly worthy of attentive disquisition.

us, that cannot be the case. To explain this phenomenon, therefore, it is necessary to observe, that in most febrile disorders of any violence, the stomach having a very intimate connection and sympathy with the head and heart, by means of its abundance of exceedingly sensible nerves, particularly that delicate plexus about its upper orifice, is often violently disordered when the other bowels are not sensibly affected. For this reason, some whimsical Physiologists, in former times enthroned *Archæus* at the upper orifice of the stomach, like *Ariadne* in the centre of her web, to make a sally from her garrison when necessary, and raise tumults in the stomach, for the safety of the general œconomy, and the expelling of its enemys *. Again, when I said that the small guts did rarely partake of this disorder, it was limited only to that inflammation which characterises the *Dysentery*; for the propulsive power of forcing along the *Chyle* and its recrements, or the peristaltic motion, being greatly weakened by this inflammation

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* This, like many other of *VanHelmonts* singularities, is not so absurd and groundless, as some modern physiologists may instantaneously pronounce.—That great man has often injured the credit of his own deep penetration, by giving a fanciful personality to the various natural powers of the animal frame; in imitation of the metaphorical genius of the ancients, who assigned a species of divine personality, not only to every virtue or vice, but to every secret power in nature.

(to be more particularly noticed afterwards) and sometimes even reversed; this of itself not being attended with much local pain, discovers itself only by its effects upon the stomach, for the above mentioned reason of its extreme sensibility. But a little attention to anatomy will convince every person of skill, that there is still a more immediate cause than any of these, by which the influence of this distemper is directly transmitted to the liver and stomach. The bile is an humour which, sooner than any in the body, is susceptible of a putrid taint. All the vitiated matter, which is reabsorbed after it is discharged by the disease into the lower guts, is carried directly into the inferior meseraic or internal Hemorrhoidal Vein, and from thence, by the Vena Portarum, into the liver. From this tainted blood it is that the liver secretes its bile: and this is the true reason why the bile, upon dissection of such as die of this disease, is always found in a vitiated state, when frequently the small guts are little altered from their natural state, further than being unduly inflated with elastic effluvia. It is no wonder then that from this cause solely, though there existed no other, the stomach should be constantly in a sickly state during the course of this

this disease. It is observable, that both the stools of dysenteric patients, and what is thrown up by vomit, are frequently bilious of different degrees of dyes, darker than the natural colour of the bile †.

There is one observation which seems to argue, that the corrupted state of the bile should rather be ranked among the causes than among the effects of this disease. It is, that when the Dysentery is epidemic, it is not uncommon for people who escape the Dysentery itself, to have their stools altered from their natural colour to sometimes a greenish hue, as if they had eaten much herbs; sometimes of a clay colour, and sometimes quite blackish, as if they had eaten a quantity of blood. But as diseases arising from the irritation of the bile in the *Primæ Viæ*, generally manifest themselves by acute pains in the stomach and

† There seems to be an universal consent among ancients and moderns in fixing upon vitiated bile, or a vitiated secretion of it, as a leading cause (a leading symptom it undoubtedly is) of all autumnal, putrid remittent, intermittent, &c. diseases of a malignant type. Numberless modern observations and treatises on the diseases of hot climates, all settle on this. But few have attempted to explain how, or why, such climates should have such a seeming direct and primary influence upon the liver, its connexions and secretions.

If the distinction I have made of the three surfaces below in page and of their subservience to each other does not throw some light into that subject, I own I do not know how, otherwise to account for it.—It is certain that by continued great degrees of heat the constitution is unaccustomed to, besides relaxing the solids and rendering the circulation languid in general by increasing the perspiration excessively, both the action and secretions of the intestines are remarkably retarded, which circumstances cannot fail of affecting the liver and its secretions, elaborated from the returning venous blood of the intestines.

and small guts, as witness Dr. Huxham's accurate history of the Devonshire Cholera, &c. and as these discoloured passages frequently happen to people in the epidemic season of this disease, without any sensible uneasiness, it seems to argue that there is a vice in the secretion, that the bile has lost some of its saponaceous quality, and is become more effete as to its virtue of changing and being changed by the aliments into good Chyle, which is not inconsistent with its being more putrescent : It seems likewise to indicate an alteration in the venous blood carried into the liver from the great guts by some degree of stagnation and vitiation there, though it has not arrived at an inflammatory height.

OF THE CAUSE OF THE DYSENTERY.

THIS is an enquiry which has excited the curiosity of many ; and people's conjectures about the cause of the Dysentery are very various. The vulgar notion is, that it is produced by the abuse of summer and autumnal fruits, or by crude Chyle generated from the excessive use of flatulent roots, particularly potatoes, which are rendered so common of late by their easy and quick propagation. But I cannot acquiesce in either
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of these causes, because in fact almost all vegetable food, as it is ascensent, rather repels than promotes any disorder which tends to putrescency. An abuse of luscious sweet fruits may sometimes prove the proper cause of a Diarrhea, but scarcely of a Dysentery, otherwise than as a Diarrhea may be the immediate occasion of exciting a latent predisposition to the Dysentery. A surfeit of very sharp or very cold fruits will immediately produce a very dangerous Cholic or iliac Passion; their coldness immediately shutting the orifices of the vessels, both imbibing and excretory, which open into the stomach and small guts; by which means the ascent of the Chyle is stopped, and the ultimate arterial vessels become first obstructed and then inflamed, so that the Chyle can neither recover its passage, nor the excretories unload themselves into the cavity. Here matters arise to a critical situation all at once, and a decision of the issue in death or recovery frequently depends on a few hours: but we have no evidence nor ground of presumption, that cooling vegetable juices, when taken into the blood, dispose it to any kind of inflammation or febrile disorder.

Again, when people attribute this, or any other disease, to the nature of the season or

weather, they generally found their presumption upon two mistakes : First, in imagining it is owing to some secret venomous or infectious effluvia in the air, conveyed from thence into the blood ; and secondly, in apprehending that diseases, impressed by the air, are merely the effect of the season in which they appear.

In order then to ascertain the nature and cause of this disease a little more precisely, let us make two observations. The first is, that generally speaking, the topical diseases, which are most epidemic in the spring, are disorders or obstructions of the breast, and of those parts which are more immediately connected with the organs of respiration ; colds, coughs, pleurifies, peripneumonies, pleuroperipneumonies, &c. whereas the topical diseases in autumn are generally those of the chylopoetic viscera, such as cholics, choleras, diarrheas, dysenteries, &c.

The second observation is, that all spring diseases are of an inflammatory nature, with a remarkably firm and fizy Crassamentum of the blood : for this reason, vernal diseases bear large and reiterated evacuations with advantage, for most part, both to the spirits, and to the resolution of the disease. On the contrary,

contrary, in autumnal diseases, especially after very hot summers, the texture of the red blood is more lax, and tending to dissolution: if any siness appears in it at all, the pellicle is thin, of a dark blue, or appears here and there only in streaks upon the surface; but as frequently it exhibits no appearance of pellicle at all, being florid and soft upon the surface, blackish below, and tending to dissolve at the bottom, like a sediment in the serum*. Even the fevers which are not topical, and agues in the spring, are attended with fizy blood; whereas those of autumn are much less, if at all so; and both the fevers and agues of the latter season are tainted with a kind of malignancy not to be observed in spring diseases.

Here are then two leading phenomena presented to us, wherein vernal and autumnal epidemic diseases differ; one respecting their seat, the other the state of the fluids.

As to the former; in winter the fluids are more condensed; their heat is then properly innate, preserved by, and proportioned to, the progressive motion of the blood; the circulation is more vigorous; the solids are better braced; the pores of the skin are more contracted;

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tracted;

* This state of the blood is particularly taken notice of by Sir John Pringle.

tracted ; and the perspiration is not so large : in proportion to the decrease of the perspiration, there is an increased secretion by the urinary passages and the vessels of the intestines, the stools are larger and more dissolved ; digestion is performed more cleverly, and fresh repairs of food are demanded in larger quantity, and by a more craving appetite.

The reverse of all this happens in summer ; the fluids become more expanded and relaxed in their structure ; they acquire an increased degree of intestine motion from the heat of the season ; their progressive motion grows more sluggish ; the pores of the skin are more relaxed and patulous, and the perspiration of course is greater ; the solids are less vigorous and elastic ; the secretions by the urinary passages and *primæ viæ* are abated ; and the action of the intestines upon their contents is more inert.

Nature habituating our bodies to these changes, it becomes a part of our constitution to obtemperate them.

For a further illustration, I shall take the liberty to divide the body into three surfaces, a distinction very necessary upon this subject, and abundantly natural and obvious when it is made. First, the external surface of the skin,

skin, which I have observed undergoes very sensible variations in relation to its perspiration; secondly, the surface of the lungs, trachea, mouth and nose, with the cavities belonging to it. This surface is even superior in extent to the surface of the skin: to it also the air has regular access by respiration, and from it is constantly exhaled a large quantity of perspirable effluvia. Thirdly, the surface of the intestines, to which no air has excess, save so much as is carried down with the aliments. This surface also is plentifully irrigated with moisture from its excretories, which is all disposed of in diluting the Chyle and its recrements, lubricating the surface of the canal these pass along, or by reabsorption into imbibing venous capillaries.

In the spring, when all nature becomes more animated, our fluids grow more active, volatile, and inflated in that degree which cherishes the spirits without relaxing the solids: the circulation also is increased in its course towards the perspiratory pores on the surface of the body, and of the lungs, with the other appendages of that continuation.

Tho' this is the general tendency and effect of the spring season, changing from cold to hot, yet both the spring and autumn, being

in a manner the crises of our extremes of cold and hot, they are frequently very turbulent and unequal, and have the extremes of both solstices many times in such immediate succession, as exposes our bodies much to hurtful impressions by such sudden changes. The weather then is often a successive jumble of hot and cold, wet and dry, tempest and calm. These seasons vibrate like the needle before it arrives at the fixing point, or like the scales of a ballance before they poize themselves. However, it is to be observed, that each equinox partakes predominantly of the solstice preceding it: it is on this account, that our bodies are then so subject to sudden obstructions, and to epidemic disorders of course.

The two surfaces of the lungs and intestines being to the surface of the skin, in a manner like two seconds to a principal, assisting and relieving it, in accommodating its perspiration to the seasons; whenever any sudden change gives a damp to the perspiration, from our exterior surface in the spring, the current is turned upon the other perspiratory surface, and the renifus is immediately felt there. The fluids then increasing in their mobility and disposition, to exhale where they can escape, do not so readily, upon a
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check of cutaneous perspiration, fall back upon that internal surface from which the air is excluded. This increasing heat and activity of the fluids in spring, is the reason why we feel cold more sensibly then than in the rigour of winter.

In autumn again, all the above circumstances are reversed, the blood begins to retreat towards the internal surface of the bowels, and the kidneys, and its defecations increasing by these excretions, any obstruction of perspiration then recoils directly upon the intestines. This idea of the origin and cause of the seat of the Dysentery seems also to argue, I confess, that, for the same reasons, the kidneys and urinary passages should be subject to autumnal obstructions and inflammations; which yet I cannot take upon me to assert from sufficient observation. I have, indeed, observed of late, that several persons subject to gravelish complaints had very severe paroxysms of them in autumn; as also that, when the Dysentery was epidemic, Dysurias, and sometimes total obstructions of urine, were to be met with, not only among patients ill of the Dysentery (which may be explained by the affinity of the Sphincter of the bladder, with the Rectum) but in other fe-

brile disorders, and even as a disease by itself. But the kidneys cannot so readily be the seat of any epidemic inflammation, if we consider they are not so properly a surface as the intestines; they are not so lax in their texture and loose in their situation, but on the contrary much more compact and firmly placed; neither have the fluids in them so short a course to their excretories and returning veins as in the intestines; add to all this, that their excretories are proportionably much fewer than those of the intestines: all these circumstances are much in their favour, and wisely established by the author of our frame. Nor are there less obvious reasons, as has been already observed, why the stomach and small guts cannot so readily be the ordinary seat of this epidemic inflammation. In short, providence seems wisely to have provided for the greater safety of our frame, in giving a degree of weakness to the lower intestines, beyond any internal organ of excretion, for admitting of that particular obstruction and inflammation which constitutes this disease.

OF THE STATE OF THE FLUIDS.

I Have already observed, that when people talk of unhealthy seasons, they generally mean no more by it than the state of the air at that time ; whereas, in fact it is always the season preceding that in which epidemics appear, to which they are primarily owing. The turbulence or variousness of the equinoxes, indeed, has the immediate effect of rousing the seeds of those diseases latent in the blood, by the sudden, and at the same time often insensible, checks it gives to the perspiration ; but it is the preceding heat of summer, or degree of cold in winter, which determines the seat, and the violence or mildness of these epidemic disorders. If the winter has been very cold and clear, the red blood will be rendered more firm and less separable into its constituent fluid particles, and they less inflated into that volatility, which is requisite to encrease perspiration, when the season begins to turn the scale in its favour ; whence arise obstructions in the membranes, and parts belonging to, and connected with, the surface of the lungs, &c. with tenacious fizy blood.

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If the summer has been excessively hot, and more especially if it has been moist at the same time, the blood and fluids are more rarified thereby; their consistency is rendered weaker, and their volatility greater: in other words, the blood then has a greater degree of solubility, or tendency to putrefaction. I shall explain how these come to be synonymous terms.

Every chemist knows that putrefaction is generated in bodies, susceptible of it, by intestine motion, without progressive motion of the fluids. The heat of summer increases always, in some degree, that kind of intestine motion in our fluids, and thereby impairs the velocity and momentum of their progressive motion. For this plain reason, the blood has generally more of a tendency to dissolution, than to any high degree of that firmness, which is commonly denominated inflammatory, in autumnal diseases; and, on that account, autumnal diseases do not bear evacuations so well as vernal epidemics generally do. The due crasis of the blood being more or less resolved, it does not exert a proper reaction upon the solids or nerves; or (if I may be allowed to presume that the ultimate fibres are vessels) it does not so powerfully supply them with that fluid which is necessary
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to brace them, and render their action sufficiently steady ; therefore the spirits are generally much affected, or impaired in the diseases of that season.

If this brief attempt to account for, and render intelligible something of the genius and nature of spring and autumnal epidemics in general, and of the Dysentery in particular, is just, I hope more accuracy and penetration will enable diligent observers to account for any variations, or particular circumstances in cases which may seem to redargue any part of the above doctrine, or rather explanation of facts.

To account then for the prevalency of the Dysentery at Newcastle in the autumns 1753, and 1759, we need only observe, that both the summers preceding them were uncommonly hot, and the intermediate winter preternaturally mild. In fact, the blood was more dissolved in the last of these autumns than it was in the former one. Generally speaking, when it had any fizefness at all, which as often it had not, it was such as above described ; for which reason, the disease did not bear blood-letting so freely as it did the former season: the blood had undergone the ferment of two successive very hot summers ; and the intermediate winter was so exceedingly

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ly mild, that it had never regained that density which it acquires in a moderately sharp winter.

This disease, like all epidemics, is comparing numbers with numbers, more frequent in cities and towns than in the country : among the feeble than among the strong, though, for a plain reason, when the latter are attacked by it, their danger is greater ; it is also more frequent among the poor and labourers, than among the wealthy, and those who live better and pay more attention to their health.

Indigence, but much more especially negligence in the article of cooling after heats by labour, exercise, &c. exposes the lower class of people prodigiously to this and many other diseases,

If there is any difference as to the article of food in promoting autumnal diseases, I am inclined to think the ballance is in favour of the poor ; a vegetable diet tending less to putrefaction than an animal one does : it is not without design, that nature produces so many cooling fruits and vegetables for our use in the hot season.

The quantity of food taken at a time has ever done incomparably more hurt in promoting

moting diseases than ever the quality of it did. In this article also, the poorer people have it much in their favour ; their diet does not generally invite them to surfeit ; and if they are sometimes betrayed by a keen appetite to overcharge themselves, they are obliged to the blessing of hard labour for the throwing off of the superfluities. Labour, and not laziness, is the best antidote for such excesses.

OF THE CURE OF THE DYSENTERY.

THE prophylactic part of medicine, in relation to this disease, may easily be collected from the history of it : but that branch of medicine will never be so much attended to as it ought, for an obvious reason.

I have already classed this disease among the febrile ones. The permanent concomitant complaints attending it after it is formed are, constant fever, drought, parchedness of the mouth and throat, dejection of the spirits, prostration of the strength, sickness at the stomach, frequent viscid, acid, or bilious vomiting, flatulency in the belly, wringing pain in the lower part of it, and often in the same region of the back ; these pains some-
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times constant but always preceding stools; an almost constant pressing to stool, with great pain and irresistible tendency to it at the same time, called a Tenesmus; the stools generally bloody or brine coloured, always slimy, and full of glary stuff, sometimes mixed with a whitish matter of less tenacity, which appears in separate little curdled-like parcels, often with blackish corrupted-like bile; the stools always odiously fetid*; they are seldom natural without the assistance of purgatives, and then they are often discharged in hard, dry, little lumps; dryness of the skin, except when clammy, unbenign sweats are raised by the intensity of the gripings and tenesmus; great watchfulness, their sleep, when they accidentally drop into any, being short and broken, with recurring pains which awake them unrefreshed. These are the principal symptoms which attend a true febrile Dysentery. When such a disease is epidemic there are many slight appearances of it, which happily do not extend to all these complaints, and which easily yield to proper applications.

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* Febrile heat naturally produces this effect, though, perhaps not in the same degree, at any other time.

The signs of danger in this disease are, the violence with which all the above symptoms appear: but the signs of immediate danger are, decrease of pain, great sinking of the spirits, lowness of the pulse, beginning coldness of the extremities, parchedness and blackness of the tongue, apthæ, white scurf or ulceration of the throat and fauces, and constant hiccup.

When there is a cessation of pain, intolerably fetid and involuntary stools, shiverings, with sometimes a sense of coldness in the belly, a slight delirium, and often unaccountable fits of agony, or rather anxiety; then the case is beyond remedy, and the patient hastens to dissolution. This stage of the disease is generally attended with a small obscure pulse and cold clammy extremities, but I have seen it in some particular cases otherwise.

It has been already observed, that this disease ought to be regarded as a fever as well as a topical inflammation: as such it requires the use of every medicine proper in autumnal fevers which is not contrary to the disease as a flux; such as bleeding, diluters, cordials, perspiratives, nay even sometimes blisters (I do not mean the unmerciful abuse of them) may be necessary.

As a Dysentery, it demands vomits, purgatives, emollient balsamic increassants, perspiratives, anodynes, antiseptics.

The simple and proper method of treating this disease, will appear more plainly by surveying the three general indications of cure; which are,

1st, To allay the fever and resolve the inflammation.

2dly, To resist the tendency to putrefaction in the fluids.

3dly, To support and promote the peristaltic motion of the intestines.

As to the first, bleeding, if it be early, is generally both necessary and useful in this disease, and it may be repeated with benefit if the fever is high, the pulse full, the blood fizy, and the patients constitution otherwise good: but repeated bleeding is by no means safe when the symptoms of the Dysentery are violent: if the patient is weak, the spirits depressed, the pulse not strong, and the crassamentum or red blood florid and soft, bleeding is to be used with caution*.

Diluting,

* This is expressly, the opinion of Sir J. Pringle.

Diluting, incrassating, mucilaginous drinks are proper and necessary, both for allaying the febrile heat, and for blunting and sheathing any vicious acrimony in the fluids* ; thereby rendering their irritation upon the tender, inflamed, excoriated parts less affecting. For if balsamics administered internally are the proper medicines for relieving the lungs, pleura, kidneys, bladder, &c. why ought they not to be of the same consequence in inflammatory diseases of the lower guts ; for in all the guts the blood runs a shorter course to the excretories and returning veins, than almost any where else. The same class of medicines are the most proper topical applications, by way of fomentation, to the diseased parts, and are highly anodyne,

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because

*. Putridity is much spoken of, and also referred to, as a cause of malignant autumnal diseases. That may sometimes be, though I cannot think that it is generally the case. I have no doubt but that in autumn the blood is in a condition to be, upon any accidental cold, obstruction, or, &c. more susceptible of such a change: but I much question if, generally speaking, such malignity previously exists, as a cause of such febrile diseases.

The true pultrescent Scurvey, seems to be that disease which is the native product of putrescency, left to its own tendency, and unmodified by any of these causes, that excite fevers. But generally speaking, it is the fever that generates the actual putrescency of the fluids.—In the dysentery, this corruption is augmented by the reabsorption of the putrified humours discharged from the sore parts of the rectum, and stagnating there.—I think Dr. Zimmerman censures his countryman too severely, nay without reason, for recommending chicken water as a proper drink in the in dysentery. The danger of it as an animalised liquor, is rather ideal; and it possesses the properties of being smooth, not flatulent and of easy absorption; and it can be easily and well corrected by such mild aromatics mixed with it, as parsley, carraway seeds, or, &c.

because of their viscous lubricating quality. These intentions are excellently answered by drink, and glysters composed of milk and water boiled, decoctions and infusions of rice, lintseed, roots of Althea, solutions of starch, gum arabic, &c.

As glysters in this disease are of considerable consequence, and are always intended for topical applications and fomentations, three circumstances are necessary to be attended to in the administration of them.

1. That they be repeated frequently through the day.
2. That they be always injected immediately after a stool.
3. And that they be given in smaller quantity than is ordinary in other cases; by which means they have all the chances of being retained as long as possible.

To increase the anodyne quality of the glysters, it is proper to add some gutts of the tinct. thebaic. to them, or to infuse a sufficient proportion of white poppy heads along with the other materials. Upon the decline of the disease, when natural, though dissolved, stools are regularly discharged. Then, and not till then, it is proper that the glysters be gently astringent with some balsam of the same nature dissolved in them, for healing the ulcerated parts, and bracing the relaxed

relaxed ones: but the inflammation ought to be intirely subdued before such be used, except in the following case, where the greater evil must be obviated.

If the signs of inflammation are great, the symptoms bad, and any tendency to a mortification to be apprehended and obviated; recourse must be had to antiseptics, both internally and by glyster. One of the most simple and efficacious is strong camomile tea*, the good effects of which in this disease I can attest. Where, indeed the danger of a mortification is apprehended from large, high, or acute inflammations (as in cholics or the iliac passion, pleurifies, &c.) with a buffy tenacious state of the blood, the use of warming antiseptics is like throwing oil into the fire: but where the mortification is dreaded from the putrescent state of the inflamed part, and its humours, or from a general tendency to solution in the fluids, then the warming antiseptics are strongly indicated†. In such cases, I have

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always

* This is particularly recommended by Sir J. Pringle.

† Dr. Zimmerman seems to be without cause, prejudiced against Aromatics and against his countryman, for recommending them in this disease.—In the first intention as encreasing febrile heat, they may be supposed to be contraindicated; but in the secondary intention as alexipharmic and antiseptic, promoting the progressive motion of the blood and reining its intestine putrescent motion and tendency, Aromatics are, under proper regulations highly necessary and useful.

always judged, what in extremity must be our last resource, ought to be our first, and therefore, I constantly have applied to the Peruvian bark with such success in very bad cases as gives me confidence to recommend it. Its importance does not arise from its topical stypticity, which, in my opinion, is contraindicated in this disease; but necessity has no law, and that inconvenience is richly attoned for by its superlative antiseptic quality of resisting putrefaction, and of supporting and restoring the natural and vital tone of the solids and the crasis of the fluids throughout the whole extent of the system. In proportion to the danger and urgency of the symptoms, antiseptics may be exhibited, more concentrated, or more diluted with mucilaginous balsamic emollients in draughts, or the like. In this disease I have generally added as much rhubarb in decoction with the bark, as I thought would correct its topical astringency. It will appear more fully afterwards, that astringents, as such, are very hurtful in this disease in particular, as they are quite improper in inflammations in general.

The second general intention of cure, is to resist the febrile tendency to putrefaction in the fluids, which is so much the more to be attended

attended to in this autumnal disease, as it is fed by a constant reabsorption into the intestinal veins of the great guts, of putrid stuff discharged from the seat of the disease. It has been explained in what manner the bile is vitiated by this disease ; and as no humour in the body is sooner vitiated than bile, so no humour dissolves the blood more than bile, especially if it acquires any putrid taint.

This indication of cure I have in some measure anticipated by what is already said of the danger of a mortification in the seat of the disease. But I would not have any to presume, that a mortification happens there only and simply from the high degree of topical inflammation, and not from the putrescent nature of the disease, or that there is no danger of a disease proving fatal from the bad state of the fluids, without an actual mortification of the diseased part ; neither, that a mortification cannot happen any where in this disease, save in the inflamed great guts. The two following cases shew the contrary.

In the month of September last, a healthy young man, in the country near the coast, was taken violently ill of the Dysentery, attended with a great depression of spirits. He was

treated in the manner recommended by this essay ; only, as the symptoms did not seem so urgent as to demand the cortex, it was not given. His dysenteric complains gradually abated, and his stools became natural, though liquid ; only there remained a great dejection of his spirits and strength. In a few days, after the abatement of his dysenteric symptoms, he was seized with the appearance of a tertian intermittent, which was not much regarded for two or three paroxysms, until, in one of them, he was seized with an intolerable anxiety and faintness, which occasioned the physician to be called again. When he was visited, about twelve hours after the access of this paroxysm, his extremities and face were quite cold and damp, and he was affected with a slight delirium : at that time he had two natural, but liquid stools, only of a more redish brown colour than common. He had no signs of mortification in the guts, as both the stools were voluntarily ; he even rose out of bed to pass them. He died in some hours after.

In the same month, a middle-aged, lusty, tolerably healthy woman, a widow, who had been for between two and three weeks very ill of the Dysentery, and not much purged
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by medicines during that time, was seized with violent deep-seated tendinous-like pains in her feet and legs, particularly in one of them, which was at the same time cold and benumbed to the touch. The use of the Decoct. Serpentar. composit. Pharm. Edinb. was immediately ordered internally, and strong aromatic embrocations were applied to her leg and foot; however next day all her toes appeared gangrenous about the first joints; the gangrene was also spreading along the edge of her foot below the small toe, and a broad livid spot appeared upon the roof of her foot, at the end of the great toe: her Dysentery still continued violent. A decoction of the bark, prepared as above, was immediately ordered for her, which she continued to use for a long time; the gangrene was checked thereby, a slight inflammation appeared round the edges of the gangrenous parts, the livid spot on the roof of her foot changed first into a bright red, and then gradually into the natural colour of the skin. Her gripes and tenesmus gradually abated, and natural stools returned, without the assistance of any other purgatives or antidyenteric medicines, except the rhubarb contained in the decoction of the bark. The

mortified parts separated in several places as deep as the bone, and in the issue she happily recovered, though slowly. It is worth noticing, that, notwithstanding the low state to which she was reduced before she began the use of the decoction, yet, during the use of it, she had several irregular appearances of the menses*. But to return,

As I apprehend, that the resisting of any tendency of the blood to solution is always indicated in this disease, when, perhaps, the absolute necessity of the bark is not ; the most proper medicines to answer that end are diaphoretics and sudorifics. Their propriety is so much the greater in this distemper, as the discharges by the skin give the most immediate check of any to the dysenteric complaints ; which, to me, is no small confirmation of the cause of it, as already explained. Therefore, in the beginning of the disease, while the pulse is full and firm, the fever sharp and the sense of heat great, *Sp. Minderei* perfectly neutralised, and given in evening draughts to the quantity of two or three drachms, is as efficacious as any medicine in promoting a diaphoresis or even a gentle sweat. But the
diaphoretics

* This is the case Dr. Zimmerman has extracted verbatim from this Essay, without acknowledging to his readers he had ever seen such a treatise on the subject of the dysentery.

diaphoretics I principally point at, are those which are also called alexipharmics, cardiacs, or antiseptics: of these there are a great many, both simple and compounded, which may be exhibited in the forms of drinks, draughts, juleps, bolus's, &c. As it is allowed by the universal consent of physicians, that the pores of the skin are the most certain passage of any emunctory in the body for discharging any morbid or vitiated matter in the fluids; and as the crises of all febrile diseases are tried to be promoted by a profuse diaphoresis, there are the strongest indications for promoting it in this disease, both because it is a fever, and on account of the vitiated tendency of the blood.

All aromatic and stimulating medicines, by their proper action in the animal fluids, while they remain unassimilated, resist the tendency to solution in the particles they are immediately contiguous to, probably by the impression they make upon the exterior surface of the animal particles, reining that internal action which resolves and breaks them†. The more tenacious such medicines
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† Where the natural heat of the blood is encreased, as it is in all febrile disorders. reason at first view must prejudice cautious practitioners against Aromatics and warming medicines; but where there is a remarkable

are of their natural quality, and the longer they continue unanimalized (if I may be allowed to use the term) or unassimilated, the more permanent will their effects be; for which reason, *cæteris paribus*, I would always for example, prefer snakeroot, or any such vegetable aromatic, to castor; and camphire, nay even spirituous liquors, to alkaline salts or spirits. I am apt to believe, that the extraordinary efficacy of the Peruvian bark is, in some measure, owing to its being long tenacious of its form in the circulation, and consequently of its proper action upon the solids and fluids; for whenever any substances are thoroughly assimilated, they lose their virtues as a medicine; and it will be admitted as a maxim in general, that vegetable substances are not so easily subdued and robbed of their native virtues as animal ones are.

There is another more confessed and obvious effect, which warming medicines have in resisting any tendency to solution in the

remarkable tendency to putrescency or dissolution of the blood, second thoughts will inculcate the necessity of applying to them. But at the same time I must add that the present mode of calling almost every plain common fever *putrid*, has introduced into too general practice a very great misapplication both of warming medicines and of blisters among inferior practitioners, misled by the abundance of what has been wrote of late upon putrid diseases.

the animal fluids: they rouse and irritate that active principle in the nerves ultimate fibrils or solids, which promotes the circulation or progressive motion of the blood; the relaxation of which gives occasion in a great measure to that encreased intestine motion which tends to resolve it. It is with great judgment and propriety therefore, that Dr. Huxham classes the abuse of (a most valuable medicine when used with propriety, namely) the hot or tepid bath in eastern and southern climates, among the procatartic causes of malignant fevers.

The third intention of cure in this disease, is to support and promote the peristaltic motion, or that action of the intestines which carries the food and its recrements regularly from beginning to end of the alimentary canal, and thereby promotes the regular discharge of natural stools. It may appear strange, that this should be pitched upon as an indication of cure in a disease which goes by the name of a flux: but it is certainly a principal one; and, if it is neglected as such, it may not unfrequently prove of fatal consequence, in cases which would not otherwise be dangerous, if it was duly attended to.

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While the great guts are inflamed, instead of that natural, regular, alternate contraction and dilatation of the muscular coat and fibres of these intestines, their inflammation, and the irritation of the putrid extravasated humours, keeps them in an almost continual state of wringing painful contraction: this constant nîsus to contraction in the fibres of these intestines, and that swelling or thickening of their coats, which is inseparable from their inflammation, contracts their cavity, shuts up, or in a great measure straitens, the access of the natural feces into the great guts; and likewise suppresses, nay even sometimes reverses, that peristaltic motion which is the cause of their natural descent; for when that action is not obtemperated from end to end, it languishes in the sound parts; and if the inflammation is very violent, it is even reversed; a remarkable example of which I once met with upon being first called to a dysenteric patient, who had the same reachings and rejections by the mouth which are to be met with in the most violent iliac passions, and who died in thirty-six hours after. We have an illustration of the truth of this, in what happens to the muscles upon strains, bruises, or inflammations in any part of them. The whole

whole muscle remains in an active partially paralytic, state; but if the pain encreases to an intolerable acuteness, the muscle is then often thrown into cramps and convulsive involuntary contractions.

The different degrees in which the peristaltic motion is affected as above, according to the violence of the inflammation which constitutes the Dysentery, is not a plausible supposition, but is plainly indicated by the following symptoms: A total suppression of natural discharges, while slimy bloody, fetid stools, are constantly urged off with great pain; the hardened knotty state of the natural feces, when they are forced away by the assistance of purgatives: the constant tendency to reaching and vomiting in violent states of the Dysentery, occasioned in a great measure by the bile being squeezed backward into the stomach, and irritating its increased sensibility, and the hiccup, which indeed, is the most dangerous symptom attending the inflammatory state of the disease, and without which it rarely proves fatal.

There is another species of hiccup, which appears towards the decline of the disease when the inflammation is abated; this is not
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so much to be dreaded as the former, though it is not without danger when neglected.

No medicine is so much calculated to promote the regular action and direction of the peristaltic motion as the repeated use of gentle emetics and purgatives: though the action of vomiting itself is an inversion of this motion, yet it is a most useful nifus to recover and forward it; for, at the same time that the stomach unloads itself by the mouth, it also forces part of its contents downward: its muscular fibres encompass it in such directions, that it cannot be thrown into violent action without rousing the peristaltic motion, and acting in its direction as well as upwards. There is another signal benefit derived from gentle emetics. The progressive motion of the blood, and its transmission through its finest passages, is thereby greatly facilitated, and the pores of the skin are thereby opened, which is indispensibly necessary in the cure of this disease; vomiting being one of the most certain and instantaneous diaphoretics in nature.

Purgatives are of no less importance than vomits; they rouse and support the peristaltic motion; they contribute to dislodge the indolent feces obstructing the higher intestines; they

they solicit a discharge of fluids from the glands of these intestines, which by some degree of revulsion relieves the load, and weakens the morbid flux of humours upon the diseased great guts : they scower off and discharge the morbid humours themselves, which prevents their putrefying and noxious tendency from being encreased, by lodging too long in the cavity after they are discharged from the circulation : and after their operation as purgatives, they leave such a gentle bracing upon the vessels as strengthens their tone without shutting their orifices, which strong astringents are apt to do. All these intentions are admirably answered by a proper continued administration of ipecacuan. and rhubarb*.

Having taken a general view of the intentions of cure, and the medicines indicated, the proper application of them, upon which their utility in a great measure depends, is reducable to a very natural and simple plan. It is no uncommon thing in this, and such other diseases as admit of different indications of cure, to jumble medicines together of opposite natures and intentions, without
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* I should readily subscribe to the preference of liquid cooling purges, if stomachs constantly sick and nauseating can be made to admit and retain them as easily as a bolus or a few pills ; but that I never found to be the case.

much judgement or order: opiates, purgatives, absorbents, astringents, and alexipharmics, all in the same composition. But as we ought to follow nature in every thing as much as possible, the first and principal lesson we are to copy from her in this disease, is to accommodate the administration of medicines in it to the division of time into day and night.

The day is for action, and, therefore, the proper season for the operation of active medicines. After bleeding, therefore, as much as is safe, and as early in the disease as possible, and then giving a regular puke in the ordinary dose, no day ought to pass (unless some particular indication forbid it) without exhibiting alternately a moderate dose of rhubarb, adding to it occasionally some grains of calomel, and a small dose of ipecacuan. from two to eight grains: this latter seldom fails to excite a little salutary puking, as well as to operate by stool. There is not a more direct proof of the inertness of the peristaltic motion, in the small guts, than that the dejections procured by these medicines always (unless in cases of very great inflammation) contain some natural feces while those discharged by the disease seldom contain any: and while natural stools are procured by such medicines, the case

case of the patient always admits of a favourable prognostic.

The most proper drinks, during this disease, are cooling mucilaginous decoctions, corrected gently with aromatics, rice water, oatmeal, gruel, lintseed tea, decoctions of Althea, &c. qualified with a little cinnamon, mace, caraway seeds, or any other aromatic most agreeable to the patient. Both the flatulencies generated constantly in the bowels, and the of the blood, require these cordial correctors added to the ordinary drink. Where there is any suspicion of a tendency to mortification, the most proper of all ordinary drinks is camomile tea, drunk in considerable quantity where the patient will comply with it : it is also in this case the best basis of glysters : if it is used freely there will be little use for cordial juleps or draught, excepting so far as they are made the vehicle of mucilaginous or unctuous medicines ; which are both salutary for the blood and for the state of the intestines in this distemper.

Again, nature having destined the night for rest, and for a more profuse perspiration, the medicines exhibited in the evening ought to correspond with these intentions. As much regard as possible ought to be paid to this

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distinction

distinction in all diseases, but in none can medicines be adapted to it with more propriety than in this.

Though anodynes contribute nothing, in the first instance, to the resolution of an inflammation, and are highly improper in all acute inflammations, which border upon mortification by a fallacious suppression of the sense of that pain which is the index of the degree of danger; yet both reason and experience justify their use and importance in the cure of this particular inflammatory disease. Indeed they are very injudiciously administered, if they are given in such quantity, or in such repeated continuance, while the inflammation is high, as to force even as long a sleep as one naturally enjoys at one time in health. This would be suppressing the sense of pain so far, as really to accelerate a mortification. It is requisite, therefore, in this disease to give opiates in such quantity as to prove only gently anodyne. The watchfulness brought on and kept up by this disease is so great, that nature requires only an alleviation of pain, in order to recruit herself by rest: opiates, therefore, given in this proportion, are only the occasion of natural rest, by relieving those grinding pains and calls to stool which resist it.

it. Opiates thus given, though for a while they check the morbid discharge, yet afterwards they relax the orifices of the vessels, and render the discharges more free and less painful.

But one of the principal benefits derived from anodynes in this disease, is the gaining of composure for promoting the efficacy of another kind of medicines, useful in all diseases, but especially so in this ; namely, diaphoretics and gentle sudorifics. Whether we consider this disease as a fever, or as a topical inflammation seated in a Viscus, which, as before explained, so immediately corresponds with the pores of the skin, and which has obstructed perspiration for its immediate cause, these medicines are highly necessary, and have not in fact, a more immediate and more sensible good effect in any formed acute disease than in this : but tossing through want of sleep, constantly recurring pains in the lower belly, and incessant calls to stool, render it almost impracticable to procure a diaphoresis by the most efficacious medicines ; without the assistance of anodynes it is impossible. Sleep naturally raises the pulse and slackens its velocity ; it replenishes the exhausted vessels, and repairs the wasted spirits with fresh supplies ; it en-

creases the momentum of the blood, particularly in its direction towards the external surface of the body, and thereby relieves the internal parts. Hence it appears, why in this disease, particularly, anodynes and diaphoretics, may be conjoined with remarkable propriety and success in one and the same dose, and why the evening is the critical time for exhibiting them.

In general the medicines requisite in this disease may with strictest justice be distinguished into nocturnal and diurnal ones, which ought to be confounded as little as the state of the patient and the disease will admit of. However, as it is sometimes impossible, on account of particular symptoms, to adhere precisely to the best general regulations, I shall mention two or three circumstances which ought to interrupt such a regular course. In some cases, when the disease runs very high, and the symptoms are very obstinate, the resistance from the inflamed lower guts to correspond with the propulsive action of the higher ones, and to receive and transmit the feces, it may happen that the medicines given to promote that intention shall be rejected upward again by vomit, and no natural passage downward shall be obtained.

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In this case it is dangerous to be so bold and free with anodynes at night, as otherwise a physician might be with safety and advantage. Here it is not improper to remark, that when, in such cases, the common anodyne is dangerous, I have found another, both anodyne and sudorific, not only safe but of signal benefit; namely, repeated fomentations of any warm decoction or infusion, such as camomile tea, or even warm water: there is never any contra-indication to these excellent applications, save the difficulty of keeping the bed-cloaths dry during the use of them, which may be easily done by active and skilful nurses.

Another circumstance which supersedes the above general rule is when a diaphoresis is procured, and the pains, which were otherwise obstinate, yield to it, it is sometimes judicious to suspend the use of other medicines, and push it on through the day, for, by this means, I have seen the disease sometimes suddenly resolved, which in appearance, and according to the ordinary course of it, would have otherwise been protracted to weeks. Some seasons, indeed, may be more favourable for these revulsions than others, as I think the last of the seasons, of which I write upon several observations, appeared to be considerably more so than the former.

As to the diaphoretics proper to be used in this disease, if the fever is high, the liquid diluting ones are most suitable : such as, sp. minderer. rendered properly anodyne, and mixed into a draught with any simple water, such as aq. alexiter-epidem-theriacal-cinamon, &c. When the fever is not high, but the pulse rather weak, the more warming diaphoretics answer best ; such as the theriacs, confect. cardiac, &c. rendered properly anodyne*.

There is one thing worthy of a particular remark here, as it is of general use in the practice of medicine ; namely, the certain effect which an anodyne has of converting ipecacuan. into a powerful diaphoretic ; so that, by concealing a few grains of this root, or some drops of its tincture, in a bolus or draught, its effect that way may be depended upon. Thus ipecacuan. approaches nearest to a specific of any one medicine in this disease, for, having no tendency to heat the blood, or encrease the fever unduly, by proper management it may be depended on as a
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* As in this part of the subject I am so explicate, and at the same time so guarded in explaining the propriety and necessity of diaphoretics with anodynes used alternately, with emetics and purgatives, I am surprized that Dr. Zimmerman with this essay before him, should not only leave them so much out of his method of cure, but should even be disposed to censure his countryman rather improperly I think for favouring them.

safe vomit, an easy purgative, a powerful diaphoretic, and a mild astringent, or rather a bracer of the tone of the vessels.

Upon the whole, in ordinary cases, nature is rationally and successfully seconded and supported in vanquishing this disease by the regular administration of gentle bracing emetics and purgatives by day, and of anodyne diaphoretics by night.

Where there is evident danger of a mortification, as the cortex is the only specific in that case, recourse may be had to it immediately, not only with safety but advantage to the disease as the Dysentery; for while it powerfully resists putrefaction and mortification, it also strengthens the tone of the stomach and small guts, and revives their languishing propulsive motion. It is, at the same time, prudent to temper it with some rhubarb to carry it along the canal, lest, by its lodging too long, its astringency should shut the orifices of the meseraic excretories, and so produce obstructions in the glands*.

This is an effect it is apprehended to produce frequently, when given great quantities,

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* This appears to have been also the opinion and practice of Dr. Whytt as cited by Sir John Pringle page 245 of the third edition of his observations

and for a long series of time, to check obstinate autumnal intermittents contracted in unwholesome climates ; insomuch, that when the British troops were abroad, during the last war, in Zealand particularly, where I had opportunity to see most of the effects of the cortex in that disease, such as did not recover by the use of it, or such as frequently relapsed, died generally of dropries from obstructed viscera, or of mortifications ; which latter was more properly the effect of dissolved blood and relaxed solids, their reciprocal action upon each other being totally enervated. It was commonaly reported among us at that time, that there was an act of the states of that province prohibiting the use of that medicine among the inhabitants in autumnal agues, because of its apprehended bad consequences : what truth there was in the report I never had an opportunity of satisfying myself ; but this I knew of many, and experienced upon myself personally, that the cortex always carried off those dangerous intermittents most expeditiously and safely, when it proved a moderate laxative during the use of it, which does not altogether correspond with their opinion, who think that medicine acts
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only topically, and while its substance remains in the body.

But though the immoderate use the cortex may be apt to produce such effects, which however I cannot affirm, and though it is advisable, even on other accounts, to conjoin some rhubarb with it in the Dysenterey, yet there is little to be apprehended from that effect of it in this disease, seeing the shortness of the period which must determine its efficacy, and the inconsiderable quantity (when compared with that necessary in the malignant intermittents) in which it is taken, can threaten no such consequences.

The most insuperable obstacle to the success of the cortex, where the use of it is necessarily indicated, is the hard undissolved state of the feces undissolved from the lower parts of the small guts and the higher part of the colon. If there has been little or no discharge of natural stools, during the course of the disease, it is always to be feared that there remains an obstruction from these consolidated feces, which, unless they can be resolved and discharged, will repel all attempts to restore the intestines to their natural tone and action. And yet as the cortex frequently acts primarily

rily as a laxative, in weak bowels, its action that way conjoined with rhubarb must be so far presumed as to give it a trial in cases where there is an imminent danger of mortification.

As I do not remember that this particular symptom of indurated feces, which I have reason to look upon as a pathognomonic one, during the strength of the disease, has been particularly treated of, I would not have it therefore concluded as merely hypothetical. It is a fact, which I was led to attend to very early when the distemper became first epidemic at Newcastle in the year seventeen hundred and fifty eight, and which I have traced with attention in numbers since; it was likewise confirmed by the observation of several other gentlemen of the profession in the place and neighbourhood at that time.

When we reflect upon it, it must be allowed a necessary consequence of an inflammation in any part of the alimentary canal, and it is a symptom which, unless it is obviated, no inflammatory disease in the bowels can be rationally cured. It is no argument against this fact, that in the decline of the disease, when the feces begin to flow regularly, they are generally liquid; for, by narrow inspection, I have often observed they are at first dissolved

dissolved lumps that had been indurated, as was evident from the number of small hard bits mixed in them ; not like the stools which flow equally liquid in a diarrhœa, or afterwards during the recovery from this disease.

I have great reason to apprehend, that this very circumstance of hardened feces may prove fatal in the Dysentery where there is no real mortification ; particularly from one case which gave me great concern, and which I paid all the attention to in my power, as the patient was a very deserving domestic of my own.

A young woman, who had been in a very indifferent state of health through the summer, and who was but newly recovered of a febrile disorder when she came into my family at the Lammass, was in September, when the Dysentery was most epidemic, seized violently ill of it, at the very same time that the menses appeared, which stopped before, they had continued with her the fourth part of their ordinary period.—No doubt that discharge took the route of the disease.

Besides these un auspicious circumstances she had concealed her having the distemper for four days. When I was first informed of it, I found her as violently ill as any I had

had ever seen, who was not in the last stage of the disease : constant violent gripes and tenesmus, great heat and drought, a quick but not a full pulse, bloody, slimy stools, but no natural ones, from the very first invasion of the disease ; and, as she had almost no remission of pain, she got no sleep. She was taken ill on the Monday, and got a vomit and anodyne on the Thursday evening, before I was made acquainted with her illness. Next morning some blood was taken, which was never repeated, both because her pulse would not bear it, and because the crassamentum was very florid on the surface, without the least appearance of siness, and of a very soft consistence. Hoping that, bad as she was, the worst symptoms might yet be obviated, I was alarmed early next morning at hearing her hiccup several times. As her pains continued intense for four or five days after, I could not apprehend a mortification was already begun, so I attempted, sometimes more than once every day, to urge and solicit natural dejections by both emetics and purgatives, besides frequently repeated glysters, but none could ever be obtained. All medicines either were rejected again, or aggravated her pains without any other effect, nor had I any better success

success with anodynes: no medicine I durst venture upon ever produced a natural stool*, and no anodyne could procure her an hour's sleep, or respite from pain at a time. As her hiccup continued to increase, theriac and camphire were applied to her stomach, and a camphorated cordial julep administered internally. These relieved that complaint considerably for some time.

Upon her pulse sinking, her pain abating, her extremities growing cold, and her spirits failing, I apprehended the approaches of a mortification, and applied a blister between her shoulders, sinapisms to her feet, allowed a free use of wine†, or spirits sufficiently diluted, and ordered a decoction of the cortex with snake-root. These in one night restored her to her former warmth, and maintained it for sometime, with a profuse diaphoresis, which

* It has often surprised me that no author who has since wrote on the subject of the dysentery has ever taken any notice, either of the knotty hard excrements, I frequently observed in this disease; nor of the stools being totally morbid without any mixture of natural excrement in most very bad cases in this disease. I have sometimes been inclined to question, whether it must not have been a symptom peculiar to the disease, in these years this essay refers to: but then it seems to be so natural an effect of such a cause as that of a true autumnal dysentery, that I know not how to make the supposition.—Therefore I shall leave the matter to the decision of further observation.

† I never observed any bad effects from wine moderately administered in this disease, when the pulse and spirits were flagging, further than that, in some sickly stomachs, it was apt to turn sour. In which cases spirits and water or burnt brandy was a preferable cordial.

which greatly relieved her pain for two days; infomuch, that I ftill dreaded the tendency to a mortification; fo I again ordered fome rhubarb, which I thought would determine that matter by exciting her former gripes, if her bowels were ftill found, which it did, and at laft the decoction of the cortex had the fame effect. I flattered myfelf, that the cortex was exerting its effect in ftrengthening the tone of the guts and exciting their action, and looked upon the obftruction, from the endurated feces, as the only thing to be conquered, which I even entertained fome hopes of doing, as now fome glyfters came away tinged with natural feces; but her fpirits and ftrength were exhausted, and ſhe had an unufual craving for very warm cordials. She could not continue the ufe of the decoction becaufe of the gripings it excited, and the parts were become fo fenfible and tender, that at laft ſhe could not undergo the adminiftration of glyfters. But what was moft remarkable, ſhe complained now, and continued to do fo for two or three days before her death, of a fenfe ſhe had of ſome load to be difcharged, which ſhe had not ftrength to expel, but which ſhe ſaid, ſhe could not live without paſſing. A day or two before ſhe died, ſhe complained

complained of a forenefs of her throat, which, being infpected, was apthous ; an epitheme, the fame with that applied to her ftomach, was laid round it, and it was carefully wafhed with an infufion of fage and rofe leaves, with red wine added to it. This patient died on the fourteenth day, with little or no delirium until within a few hours of her death ; fome fenfe of griping now and then to the laft, and no in voluntary ftools.

The principal reafon for my inserting this hiftory is to fhew, that though, from the beginning, the cafe was one of the moft violent, and attended with fome very unfavourable circumftances to aggravate it, yet to the laft there feems to have been no mortification in the bowels actually commenced, which is the cafe with few who die during the violence or febrile inflammatory ftate of the difeafe : how far this was owing to the ufe of the cortex I fhall fubmit to the judgement of others. But I cannot help being of opinion, that if the difeafe, bad at it was, had been timely difcovered, the bowels early emptied of the natural feces, and kept gently open and moving before the violence of the inflammation had impreffed a continual fpafm and renifus to the defcent of the natural feces upon the inflam-

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ed intestines, the immediate cause of this patient's death would have been obviated.

This case, with many other examples, I have had both of hardened feces themselves, and such resolved again and happily discharged during the violent state of the disease, made me presume that it would be of great use in the cure of it, if a mild laxative, properly corrected with carminatives and anodynes, could be contrived and administered frequently, so as gently to stimulate the intestines and resolve their contents, without endangering any exacerbation of the gripings. I had very soon after a very proper occasion of trying the success of this method.

An elderly gentlewoman, of a pretty good constitution, had been very ill of this disorder; the symptoms had abated considerably for some time under the management of a very skilful gentleman; but she relapsed into the disease again with the same violence as at first. All along her pulse had been remarkably full, on which account she was let blood several times, and her blood was always uncommonly fizy, beyond any person's I ever knew in this disease. In this relapse she was as feverish as at first; she had a constant sickness at her stomach, and a tendency to puke, which
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gave her a constant kind of febrile anxiety, so that one would have apprehended her pain great, which, in fact, was not the case, for her gripes and tenesmus were remarkably gentle, though her stools were as bad as when these are most severe. From the first invasion of the disease she never had any natural dejections save twice, on two different days, that some little hard knots of feces were passed. In this situation, I being called in the evening, her stomach was washed with some camomile tea, and an anodyne was given both in a draught and glyster. Next morning she began to take every four hours the bigness of a nutmeg of lenitive electuary with some rhubarb, a small portion of jalap, some confectio cardiaca and tinct. theb. added to it: by the use of this, natural stools were restored, hardened at first, the morbid discharges abated apace, the sickness at her stomach was removed, the fever subsided, and she recovered daily. I have been since inclined to think, that Dr. Cockburn's specific electuary for the Dysentery must be a composition of this nature, with, perhaps, some of the milder balsamic astringents added to it; for I have been told, that it acted rather as a gentle laxative than as any sensible astringent.

Upon the decline of this disease, after obstinate and tedious cases, when natural stools are restored to their course, the three following symptoms are frequently met with, some of which prove very troublesome, nay sometimes dangerous. The feces continue for a long time to be very liquid and dissolved; white tallowy-like substances, frequently of a considerable size, are discharged by stool, and the patients are often distressed and reduced to great extremity by an obstinate hiccup. These three symptoms have each of them their particular reference to the three divisions of the alimentary canal; namely, the great guts, or recent seat of the disease, the small guts, and the stomach and gullet.

The loose state of the stools at this time, is what may be properly called a flux or diarrhœa*. It is the effect of the remaining weakness or relaxed state of those vessels, of the great guts particularly, which secrete the humours for mollifying the feces, and lubricating their passage. These vessels, having not yet recovered their tone and contractile energy, pour out their moisture in too great quantity,

* Dr. Zimmerman seems to have considered this as a continuation of the disease.

quantity, which keeps the feces in that liquid state. This undue quantity of secretion (as all discharges proceeding from relaxation generally do) prevents the body from recovering its former strength so soon as it otherwise might. Now it is, that gentle bracers and astringents become proper and useful, administered both internally and by glyster. But the cure principally depends upon restorative nourishing diet, which the stomach has a remarkable craving for ; a certain indication of recovery in the decline of this disease.

The white tallow-like substances are unnatural concretions formed in the small guts during the course of the disease ; their strength and action being weakened and vitiated by the preceding inflammation of the great guts. The generation of such substances is not peculiar to this disease, they being frequently discharged by persons who labour under chronic disorders and obstructions of the alimentary canal. Whether it is the peculiar property of the liquor secreted from the plexus glandulosi of the small intestines, in weak states of the bowels, to acquire this consistence and appearance by inspissation ; or whether, more likely, the free absorption of the Chyle being weakened and impeded, some of it

stagnating and mixing with the secreted juices, coagulates into these steatomatous-like substances*; or what other circumstances may concur in generating them, is hard to determine. This, however, seems certain, that they are the production of the small guts, as those substances never begin to appear until the feces have regained their wonted passage along the great guts. These appearances require the use of such strengthening purgatives as rhubarb, &c. with the addition of calomel sometimes, which acts by its weight, in some measure, to assist nature in expelling them.

The seat of the hiccup, which is so very annoying to patients who are reduced very low before the inflammatory state of the disease is conquered, is the stomach. This hiccup is carefully to be distinguished from that far more dangerous one already mentioned, which occurs during the height of the disease. Though the first, when the symptoms happen to be removed or obviated which excited it, if the patient is before much reduced, often
changes

* I cannot say this conjecture as to the nature of these concretions is so clear and satisfactory as I could wish it. Sir John Pringle has referred both these and the knotty excrements to the convalescent stage of the dysentery. These suety substances are not peculiar to the dysentery, I have not unfrequently found them discharged in other bad chronical complaints of the bowels.

changes into the nature of the last. As the hiccup, in the decline of the disease, is intirely owing to a great inanition of the vessels and relaxation of the solids, there is always hopes of removing it, if the patients constitution is not reduced past repair. But if that is not the case, as it has not any obstruction of the intestines, nor inflammation degenerating into mortification, for its immediate cause, proper medicines, and nourishing light diet, will always cure it. Musk and camphorated juleps, with other medicines of the same nature are very serviceable, together with theriac or other aromatic fomentations or applications externally. I tried oil of cinnamon dropt on a piece of fine sugar, on account of its being strongly recommended in some monthly paper, but found no greater effect from it than from other forms of aromatics. The truth is, if the stomach is very greatly relaxed, the use of aromatics is not sufficient to remove the cause. The vessels of the stomach being greatly relaxed, the gastric and other juices are poured into it in extraordinary quantities, which, by reabsorption and exhalation of its most fluid parts, collects into large quantities of viscid indolent

phelgm, and proves a vast load upon the stomach in this enervated state ; therefore there is no other effectual method of relieving the stomach from time to time, but by repeated gentle bracing vomits ; for untill the vessels of the stomach recover their tone, the first sign of which is a remarkable craving for food that plegm is recollected very fast ; and whenever it is regenerated in any quantity, the hiccup recurs again, though the vomit is always a temporary, and proves at last a total cure. Nothing answers the intention, both of vomiting and bracing the stomach, better than camomile tea, which I do not recommend as a specific throughout the whole course of this disease in any other sense, than as it is one of the most common, pleasant, efficaciously antiseptic, and bracing bitter infusions.

There are three species of medicine, which I do not think it sufficient to have taken no notice of, as they have been of too common use in the Dysentery, though I suspect them to be rather hurtful than serviceable in that disease. These are liquid purges, astringents, and absorbents.

Liquid purges, aqueous decoctions and infusions, I mean, especially where fenna is an ingredient, are apt to generate flatulencies
and

and wind in the small guts, especially if there is any considerable obstruction to the descent of the feces, either from their own indurated state, or the inflammatory state of the diseased parts. By this means the gripings are both irritated and excited higher in the belly than they commonly arise in this disease. I have suspected likewise, that these liquid purges being more absorbed into the blood than those given in substance are, they have more of a tendency to dissolve it further than to strengthen it*. For which reason I have always apprehended it more safe and successful to give both emetics and purgatives in substance, allowing the juices, which they find in the guts, or which is solicited from them, to be their solvent. By this means there is another advantage gained. The gentle astringency, or bracing quality, inherent in the substance of ipecacuan and rhubarb particular, and which does not part from their substance by infusion so readily as the purgative quality does, is thereby conveyed, and co-operates in a mild and safe

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degree

* Here I principally allude to infusions of senna, though perhaps my suspicion may not be well founded; but the most insuperable obstruction, I found to liquid purges, as I have noticed above, was the impossibility of getting them taken and retained by a constantly nauseating stomach.

degree along with the other. For this may be observed of all medicines, which is notoriously known of the Peruvian bark, that it is more difficult to extract their astringent quality from them than any other virtue they are possessed of, unless it is from the delicate texture of blossoms and flowers ; such as balustian flowers, roses, &c.

The impropriety of strong astringents, where there is a large inflammation or suppuration in any part, is so obvious upon the least reflection, that it is evident, I think, the practice must be very hurtful, until the decline of the disease, as above observed. While the guts are unemptied of the natural feces, and unopened to their passage, nothing can be more dangerous than to bind them up more. If strong astringents have any meaning in this disease, they must be intended to act topically upon the vessels from whence the morbid discharge is derived. But the first question, as to that intention, is, how do these medicines reach the seat of the disease if there is not a free passage along the canal ; And the next is, are they at all a proper topical application to the seat of a putrescent infectious inflammation or ulcer.

The

The fatal effects of strong astringents taken in large doses, according to the direction of vulgar nostrums for this disease, are so frequently to be met with, that it is enough to deter any physician from meddling with that practice. The credit that these secrets gain, by their immediate effects, upon persons who are effected with a slight degree of this disease, proves the destruction of many who labour under the true febrile Dysentery. The melancholy accounts I have heard of whole families dying of this disease, in country places especially, for want of proper care and directions, must make every person of humanity lament that so many should be lost in a disease, where early attention to it, and proper management of it, promise so much.

Aborbents may be of some use in the stomach when an acid prevails there ; and the best in that case is *magnesia alba*, which, by recovering and uniting with an acid in the stomach, becomes again a gentle laxative neutral salt ; but how aborbents are intended to act with regard to an inflammation, I am at a loss know. They cannot enter the blood ; if they can pass along the alimentary canal while the smaller guts are indolent and unem- tied of already endurated feces, their abor-
bent

bent quality must be saturated before they reach the seat of the inflammation ; the natural inertness of absorbents must also be in hazard of increasing the weakness of the propulsive action of the small guts, and they must increase the dryness of the undislodged feces ; some striking examples of which are mentioned by Dr. Huxham, somewhere in his observations, *De aëre et morbis epidemicis*. Besides all this, Dr. Pringle has demonstrated, by his ingenious and judicious experiments on septics and antiseptics, that so far from being endowed with any antiseptic quality, they, on the contrary, are evident promoters of putrefaction ; consequently they, mingling with the putrid humours of the bile and of the diseased parts, if their efficacy can reach them, are in hazard of corrupting them further. How suspicious then are the effects of chalk-juleps, and white decoctions, too freely administered in this distemper ?

From a general view of what ought to be the intentions of cure, it is obvious, that mucilaginous and unctuous draughts must be in every respect preferable to absorbent ones, even supposing the latter capable of doing

no

no hurt. Of the unctuous medicines*, the most solid ones, such as sperma cæti, must likewise be preferable ; and if wax could be properly dissolved, and its parts separated, it would probably be preferable to any other. The best attempt to pulverize it, is the pulv. testac. cerat. pharm. Edinb. In that composition I look upon the absorbent as of no further use than to separate the parts of the wax ; and though the scorching of it, in some measure, alters its balsamic quality, yet I apprehend it communicates a diaphoretic one to it.

This leads me to mention another very efficacious medicine in this disease, well known for sometime past ; namely, the vitrum antimonii ceratum. When prudently used, it is a good and powerful medicine for the Dysentery. However long it may have continued a secret in ignorant hands, it must have been first discovered, and the use of it ventured upon, by a skilful and bold practitioner, who has judged rightly that this disease was, in a great measure, to be successfully attacked by rousing and preserving the peristaltic

* Dr. Zimmerman with great appearance of justice, seems to lay much stress on these, for they certainly tend greatly, both to soothe the gripes and to lubricate the feces when they are hardened and obstructed.

peristaltic motion of the bowels by means of vomiting and purging. The medicine is safe at any time when the inflammation is not at a dangerous height, and the patient has strength to undergo its operation. The dose is uncertain, until the power of every preparation of it is tried. The wax in it seems principally designed to sheath and cover the strong degree of irritation in the vitrum antimonii. Its effect in proper doses is the same with, though more violent than the ipecacuan; therefore the latter is generally preferable as a milder and more safe medicine. One thing to be remembered of the strong antimonials is, that they are not soon, if ever exhausted of their powers while they continue in the body; therefore the vitrum will act as a cathartic as long as it remains in any part of the canal, whereas the vegetable medicines have their emetic and cathartic virtues drawn from them by infusion in the humours or fluids of the guts, and the remaining parts become indolent or subastringent.

It is probable that this medicine has been invented and used before the virtues and value of the ipecacuan root were known, which

which has likewise been adopted as a secret in the cure of the Dysentery, because of its operation analogous to that of the vitrum. Dr. Gordon, of Dumfreis, communicated to me, since the writing of this, the nostrum of one Jardin, an Irishman, who acquired great reputation and a small fortune in Galloway, between twenty and thirty years ago, by curing the Dysentery, only by the repeated use of the following draughts, proportioned to the age and strength of the patient. *R. pulv. R. ipecac. ʒi. bol. armon. ʒij. coral. rubr. ppt. ʒi. aq. alexiter.——cinamom. hord. aa. ʒvi. fyr. peon. ʒi. m. f. M.* It is evident, that the ipecacuan was the medicine depended on, without which there could be no efficacy in the others for removing that cause of the disease which the ipecacuan is so suited for resolving; besides this mixture, he used only anodynes and a strengthening electuary and cordial julep, during the recovery of such as were greatly weakned by the disease.

If it is attended to when any distemper is epidemic, there will generally be found a great number of anomalous complaints prevailing, which have some affinity with the epidemic §.

The

§ Dr. Zimmerman remarks, that this was the case in the neighbourhood of these places which were the seat of the dysentery, upon which he formed his observations on that disease.

These were more numerous and various in the autumn, seventeen hundred and fifty-nine, than the preceding one. The latter of these seasons especially, it was very common for numbers of people, who escaped the Dysentery, to be troubled with flatulencies, slight gripings and twitchings in the belly, which was generally attended with blackish stools, or such as were of a darker colour than natural.

Stranguries were likewise pretty frequent, and icteric complaints, or the jaundice; these small conduits and their sphincters becoming sometimes the seat of some degree of the epidemic complaint, by virtue of their affinity, and connexion with the intestines. The strangury was a very common symptom in many fevers, which occurred during the prevalence of the Dysentery. I attended one in a fever at that time, now happily recovered, who passed no urine for ten days, except what was drawn off by a catheter. I had then also particularly one patient, afflicted with one of the most obstinate suppressions of urine that ever I met with in one who recovered from such a disease, without any other concomitant complaint or disease, unless that of a tender relaxed habit.

Another

Another complaint, which frequently occurred during the last dysenteric-season, was dry gripes, which in some cases rose to a very excruciating and dangerous height. It was always produced by an unusual sluggishness of the intestines, which occasioned a remora of the contents in the passage, until the bowels became overloaded by the accumulation of them. A middle aged healthy person was taken violently ill of this disorder. It was attended with a remarkable sluggishness of the pulse, insomuch that it did not beat seconds. His bowels yielded to the influence of a warming purgative electuary, and some glysters of the same nature, so well that for two days the quantity of his discharges was really surprizing. His pains, and the languidness of his pulse continued until the load was fully discharged: whenever that was the case, nature, like an elastic bow, suddenly unbent, recoiled to the opposite extreme. His pain subsided, his pulse hurried all of a sudden from one extreme to another; it grew remarkably quick and full, and he was in the delirium of a fever for two or three days more. Being perfectly recovered, but, contrary to his physician's advice, venturing abroad, and engaging in business which exposed him to cold

cold too soon, he relapsed into some degree of his complaint again. By what degrees he recovered the second time, I had not access to know. This person, being a master glazier, it was afterwards foolishly reported, that his disease was owing to the fumes of the lead; but his disorder differed nothing from the case of many others at that time. I had access just then to be particularly acquainted with the case of another gentleman in a much more dangerous situation, from the same complaint, in so far as his disorder hung about him for many weeks, and he was not at last relieved but by a very extraordinary discharge of hard knotted stools, mixed with half-dissolved viscid stuff, all almost as black as tar.

The Dysentery this last season differed in many respects from its appearance in the former season. In the latter season greater numbers had it in that slight degree, which was attended with little fever and no danger. In many, who were seized with seemingly great violence, it was unexpectedly checked when there appeared all reason to apprehend it would have run out to a much greater length. It was not uncommon to find it complicated
with

with agues, rheumatism*, &c. into the latter of which it frequently degenerated. In the former season the griping pains attending it were more confined to the lower belly: in the latter they were very ordinarily felt also in the back, along, as might be supposed, the windings of the rectum and colon; yet after the dysenteric stools were, in a great measure, gone, and the disease over these pains often remained, or assumed the appearance of a lumbago or sciatic, with pains striking down the thighs.

Last season the Dysentery seemed to be succeeded by a low petechial fever, which however, did not spread at all so much as it seemed at first to threaten, for the winter was remarkably healthy. In one instance I saw the Dysentery and this fever fatally united. In the former season, though the same fever did appear sometimes, yet the malignant sore throat was much more epidemic the whole winter after the Dysentery. The succession

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of

* This resolution of the disease, which Dr. Akenfide had also observed, disposed him to adopt the idea of the dysenteries being a particular species of the rheumatism, in his Commentary on the Dysentery. He, if I remember right, is also fond of ascribing an anodyne virtue to ipecacuan, in very small doses. I have very commonly observed, especially in very young persons, a disposition to sleep after the operation of that medicine, as an emetic; but I never thought of imputing it to any thing else than the fatigue, and the subsequent sense of ease, that generally succeeds the operation of an emetic.

of these diseases to the Dysentery seems to confirm the idea I have endeavoured to give of the nature and cause of that epidemic, and to reflect some light upon the procatartic cause of them.

It is worth observing, that the more the season advances, and the later in the year it is, when persons are seized with this epidemic, the more chronical do the symptoms of it grow.

F I N I S.

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